



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/601,866

06/23/2003

Anand G. Dabak

TI-28441A

7204

23494 7590 10/02/2008
TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER

CORRIELUS, JEAN B

ART UNIT

PAPER NUMBER

2611

NOTIFICATION DATE

DELIVERY MODE

10/02/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@ti.com

Office Action Summary	Application No. 10/601,866	Applicant(s) DABAK ET AL.	
	Examiner Jean B. Corrielus	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/24/08.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26, 28-36 and 38-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26, 28-36, 38-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Equation 6, “ S_{12} ” should be replaced by “ S_2 ” so as to be consistent with fig. 2.

Claim Objections

2. Claims 26, 30-36, 38-45 are objected to for the following reasons.

Claim 26, recites a correction circuit coupled to receive a first symbol transmitted from a first antenna at one time and a complement of a conjugate of a second symbol transmitted from a second antenna at the one time and coupled to receive the second symbol transmitted from the first antenna at another time and a conjugate of the first symbol transmitted from the second antenna at the another time”. However, the **complement of the conjugate of the second symbol** and **the conjugate of the first symbol** have been received but not used by the correction circuit. Such deficiencies can be corrected by amended claim 26, as follow: insert “and a second symbol estimate in response to the second symbol and the complement of the conjugate of the second symbol” in line 7, after “first symbol”; insert “and the second” after “first” in line 8; replace “estimate” by estimates” in line 9 and; insert “and a second symbol signal” in line 10 after “signal”. Such amendment would be consistent with fig. 3 and corresponding text that require that two signals be generated at the output of the correction circuit using the plurality of input signals. The same comment applies to claim 36. in addition, claim 26 recites “receive a first estimate signal determine from one of the first symbol and the

second symbol and a second estimate signal determined from one of the complement of a conjugate of a second symbol and the conjugate of the first symbol". However, there is no use of the first and second estimate signals in the claim.

Claim 28 should be amended to reflect any change made to claim 26. As per claim 38 see claim 28. Claims 43-44 would need to be amended to reflect any change made to claim 36. The further limitation recited in claim 45 appears to be directed to an apparatus claim rather than a method claim. Any claim that fails to correct the deficiencies noted in its corresponding base claim is likewise objected to.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 26, 28-36 and 38-45 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 26 recites "a first estimate signal determine from one of the first symbol and the second symbol and a second estimate signal determined from one of the complement of a conjugate of a second symbol and the conjugate of the first symbol". However, the specification, as filed, does not provide support for such limitations as claimed. The same comment applies to claim

36. Note that the dependent claims are likewise rejected because of their dependency to a rejected claim.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 36 and 38 and 40-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

claim 26 recites "receive a first estimate signal determine from one of the first symbol and the second symbol and a second estimate signal determined from one of the complement of a conjugate of a second symbol and the conjugate of the first symbol". However, there is no use of the first and second estimate signals in the claim.

Claim 36 recites a step of producing a first estimate signal determined from one of the first symbol and the second symbol and a step of producing a second estimate signal determined from one of the complement of a conjugate of a second symbol and the conjugate of the first symbol. However, there is no relation (connection) between such steps and previously/subsequently recited steps.

Claims 38-45 are likewise rejected because they fail to cure the deficiencies noted in claim 36.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

Art Unit: 2611

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 26, 28-36 and 38-45 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-22 of US patent No. 7,366,266. every limitation claim 26 of the pending application is included in claim 10 of the US Patent except that claim 10 of the patent fails to teach the additional limitations of "a first estimate signal determine from one of the first symbol and the second symbol and a second estimate signal determined from one of the complement of a conjugate of a second symbol and the conjugate of the first symbol". However, one skill in the art would be motivated to determine the first estimate signal from one of the first symbol and the second symbol and a second estimate signal from one of the complement of a conjugate of a second symbol and the conjugate of the first symbol so as to be consistent with system design that would have required that such parameters be determined in such a fashion.

Claim 28 correspond to claim 11.

Claim 29 corresponds to claim 12.

Claim 30 correspond to claim 13.

Claim 31 correspond to claim 14.

Claim 32 corresponds to claim 15.

Claim 33 correspond to claim 16.

As per claim 34, one skill in the art would have been motivated to configure the antennas as transmitting antennas in order to facilitate transmission of the symbol signal to desired remote receiver.

As per claim 35, it would have been obvious to one skill in the art to provide a received antenna to receive the signals transmitted from the transmitter to satisfy the input requirement of the wireless receiver that would require an antenna in order to receive the transmitted signal.

Claim 36 corresponds to claim 17 except for the limitations noted above with respect to claim 26 accordingly, the analysis applies to claim 26 equally apply to claim 36.

Claim 38 correspond to claim 18.

Claim 39 correspond to claim 19.

Claim 40 corresponds to claim 20.

Claim 41 correspond to claim 21.

Claim 42 correspond to claim 22.

As per claim 43 of the instant application differs from claim 10 of the US Patent only by the fact that claim 43 of the instant application is a method claim and claim 10 of the Patent is an apparatus claim. However, it would have been obvious to one skill in the art to implement the method claim as recited in claim 43 using the apparatus claim as set forth in the copending application as this would only require common sense.

As per claim 44 of the instant application is encompassed as well by claim 10 of the US patent. The same analysis applied to claim 43 above equally applies to claim 44.

As per claim 45 of the instant application is encompassed as well by claim 16 of the patent. The same analysis applied to claim 43 above equally applies to claim 45.

9. Applicant's comment with respect to the objection to the specification is noted. In order to ensure that the record reflects the amendment to equation 6, it is suggested to strikethrough the term on the left of the "+" sign and insert the correct term, next to it (but underline). Applicant stated that support for the subject matter added in claims 26 and 36 can be found at page 5, line 19-24. However, such section of the specification only teaches that a first fading parameter and a second fading parameter are, respectively assumed for a signal transmitted from respective first and second antenna.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on Monday-Thursday from 9:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jean B Corrielus/
Primary Examiner, Art Unit 2611